



US007724242B2

(12) **United States Patent**  
**Hillis et al.**

(10) **Patent No.:** **US 7,724,242 B2**  
(45) **Date of Patent:** **May 25, 2010**

(54) **TOUCH DRIVEN METHOD AND APPARATUS  
TO INTEGRATE AND DISPLAY MULTIPLE  
IMAGE LAYERS FORMING ALTERNATE  
DEPICTIONS OF SAME SUBJECT MATTER**

FOREIGN PATENT DOCUMENTS

EP 0 881 591 12/1998

(75) Inventors: **W. Daniel Hillis**, Encino, CA (US);  
**Bran Ferren**, Beverly Hills, CA (US)

(Continued)

(73) Assignee: **Touchtable, Inc.**, Pasadena, CA (US)

OTHER PUBLICATIONS

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 1218 days.

M. Wu, C. Shen, K. Ryall, C. Forlines, and R. Balakrishnan. (2006);  
Gesture Registration, Relaxation, and Reuse for Multi-Point Direct-  
Touch Surfaces; in Proceedings of IEEE Tabletop 2006 Conference  
on Horizontal Interactive Human-Computer Systems, Adelaide,  
South Australia; 8 pages. M.Wu and R. Balakrishnan; (2003).

(21) Appl. No.: **11/286,232**

(22) Filed: **Nov. 23, 2005**

(Continued)

(65) **Prior Publication Data**

US 2006/0125799 A1 Jun. 15, 2006

*Primary Examiner*—Richard Hjerpe

*Assistant Examiner*—Kimmhung Nguyen

(74) *Attorney, Agent, or Firm*—Michael A. Glenn; Glenn  
Patent Group

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 10/913,105,  
filed on Aug. 6, 2004, and a continuation-in-part of  
application No. 11/188,186, filed on Jul. 22, 2005.

(60) Provisional application No. 60/701,892, filed on Jul.  
22, 2005.

(51) **Int. Cl.**  
**G06F 3/041** (2006.01)

(52) **U.S. Cl.** ..... **345/173; 345/179; 178/18.01**

(58) **Field of Classification Search** ..... 345/156–158,  
345/173–179; 178/18.01–18.06

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,478,220 A 11/1969 Milroy  
3,673,327 A 6/1972 Johnson et al.

(57) **ABSTRACT**

An interactive display system, including a touch sensitive  
display, establishes a first image and at least one secondary  
image, each image representing various spatial coordinates,  
the spatial coordinates overlapping at least in part such that  
each image comprises an alternate depiction of subject matter  
common to all of the images. The first image is presented  
upon the display. Responsive to user input including contact  
with the display, imagery presented by the display is updated  
to integrate a region of at least one of the secondary images  
into the display. Each integrated region has substantially  
identical represented coordinates as a counterpart region of  
the first image. Further, each integrated region is presented in  
same scale and display location as the counterpart region of  
the first image.

(Continued)

**19 Claims, 12 Drawing Sheets**

